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MONTHLY REPORT

1 August - 31 August 1962

RESEARCH AND DEVELOPMENT BRANCH
ENGINEERING STAFF

RESEARCH AND DEVELOPMENT LABORATORY

PROJECTS AND ACTIVITIES

2001-90 KE-24 TELETYPE TEST MESSAGE KEYER [REDACTED] 25X1A9a

This project is continuing. The estimated time for completion is approximately September 21.

2001-114 MODIFICATION OF G43/G STAND & TSD STAND [REDACTED] 25X1A9a

Modification of three TSD and one G43/G stand was completed on 22 August. Canvas carrying cases were made for the above units.

2004-210 2 - 32 MC PREAMPLIFIER, SOLAR POWERED [REDACTED] 25X1A9a

Tests are almost complete on this unit. The report remains to be written and published.

2004-214 EVALUATION OF THE TRAK MULTICOUPLER (MODEL 108) [REDACTED] 25X1A9a

Incomplete tests on this unit indicate that the performance data generally agree with the manufacturer's data. The tests are continuing.

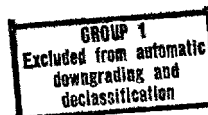
2004-216 WEBCOR PERSONIC RECORDER EVALUATION [REDACTED] 25X1A9a

This unit meets the manufacturer's specifications except in battery life, operating temperature range, frequency response (recording electronic signals), wow and flutter. Frequency response is sufficient for voice (dictation) use with the internal microphone but is not adequate for recording electronic signals. Mechanical operation is not entirely reliable. Switch reliability is questionable and the switch detents are not deep enough. Rewind condition is erratic. The report is in process of being published and distributed.

2007-1 MAINTENANCE OF RADIATION DETECTION EQUIPMENT [REDACTED] 25X1A9a

Tube and power cable replacements have been installed. Calibration has not been completed because of higher priority projects.

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2007-74 INVESTIGATION OF NEW TUBE TYPES ()

25X1A9a

A considerable amount of time has been spent searching through publications, periodically, for new tube developments. A request for brochures has been sent to nine tube manufacturers for information on instant-heating type filamentary tubes.

2007-78 AT-3 TRANSMITTER MODIFICATIONS ()

25X1A9a

There was no activity during this reporting period. We are awaiting return of 4 motors from () to complete the remaining units.

25X1A5a1

2007-82 RT-42 SYSTEMS - FABRICATION, RS-502 ()

25X1A9a

Two each RS-502 units have been completed and forwarded. The remaining units are in process and are approximately 90% complete.

2007-84 MODIFICATION OF MOTOROLA HANDI-TALKIE TRANSMITTER ()

25X1A9a

Five Z series Motorola transmitters and receivers have been modified, tested, and delivered. We are awaiting an antenna connector plug from Motorola to complete the sixth unit. A power transformer for the battery charger is on order. The charger should be ready for delivery about 15 October.

2007-86 FABRICATION OF KA-2 UNITS ()

25X1A9a

One each production prototype unit is 90% completed, and all parts are on order. Fabrication will start early next period. Estimated completion date is early October.

25X9A2

2007-87 FABRICATION OF RS-52 () EQUIPMENT ()

25X1A9a

A parts list for the transmitter-keyer unit and the battery supply has been compiled and turned over to fabrication for ordering. We are awaiting a firm design before compiling a parts list for the AC power supply, DC-DC converter, and the antenna coupler.

2007-88 FABRICATION OF CRYSTAL CASES, TYPE CC-6 ()

25X1A9a

This project has been started and will continue on a fill-in basis for contract employees. One thousand units will be produced.

2007-89 AT-3 TEMPERATURE TESTS ()

25X1A9a

Twenty-five each units have been received from the T&I shop for cold chamber test. Of these 13 each sets failed in the cold chamber test. After checking with () and T&I there appears to be a discrepancy in test procedures. The Lab is now evaluating a different test procedure.

25X1A5a1

~~SECRET~~2007-90 FABRICATION OF RF CHOKES FOR THE AT-3 ()

25X1A9a

Forty each chokes have been constructed and forwarded to ()

25X1A5a1

2108-5 AT-3 TEST SET ()

25X1A9a

The power supply components for this unit are on order. Dummy load resistors have been received.

2188 PORTABLE MICROWAVE COMMUNICATIONS SYSTEM, RS-43 ()

25X1A9a

Antenna gain and pattern measurements have been completed. About a week of testing remains to be done on this project.

2547 ONE-TIME PAD MATRIX, HL-6 ()

25X1A9a

Production of the HL-6 has been temporarily halted because of difficulty in getting new 2N527 transistors to work in the circuit. A base resistor should correct the problem. The optimum value of resistance to be inserted is now being determined. When these resistors are mounted, production testing will continue.

Unless other unforeseen difficulties are encountered, the remaining four machines should be ready to ship by 1 October 1962.

2554 RR-48 TRANSISTORIZED RECEIVER, CRYSTAL-CONTROLLED ()

25X1A9a

The A&A of the preproduction prototype has been completed. Five units have been completed and production test data taken. Shipment of these units awaits completion of the silk screen used to apply panel markings. Ten additional boards are being fitted in cases.

25X1A

2555 () SYSTEM, RS-52 ()

25X1A9a

Development on this project is completed. See project No. 2007-87 for fabrication.

2560 RECHARGEABLE POWER SUPPLY FOR RS-1 OR RS-6 (PS-13) ()

25X1A9a

A prototype case is being constructed. Final circuit checkout and hash suppression await completion of the case.

2565 KE-22 BASE STATION KEYING UNIT ()

25X1A9a

A minor modification has been made on the production run of the printed circuit boards. Units are undergoing checks. We are awaiting final shipment of 3C1030A's from the manufacturer before the project can be completed.

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2566 8-CELL BATTERY PACK ()

25X1A9a

Seven each units have been completed and turned over to supply for stock.

2567 CK-21 MORSE OFF-LINE KEYS () /

25X1A9a

The breadboarded Morse recognition circuits and part of the send-receive matrix are functioning. The remaining wiring, used for transmission, is being added to the matrix.

After many experiments, an epoxy suitable for use in molding memory plates was selected. Repeated cycling, -40 C to +60 C, was done on test plates with no alteration of ferrite core characteristics. Twenty thousand cores were given incoming tests and are now being molded into plates.

A memory driver module with all-welded construction was built without difficulty.

The sense amplifiers are ready for full-scale breadboarding.

One each prototype plug-in unit has been fabricated using welded module techniques.

2570 CK-23 MORSE CODER-KEYER ()

25X1A9a

Mechanical work in the development of the engineering model is continuing. Final changes were made in the idler carriage and actuator. The read arm and spindle were machined.

2575 KE-22 WITH HS5 CAPABILITY (KE-25) ()

25X1A9a

The instruction book is being processed. The unit is complete and will be delivered when the instruction book is finished.

2576 AT-3 BATTERY CHARGER ()

25X1A9a

BS/B-3 battery test data are being taken for various charge rates. On the basis of data taken so far, the battery charger will be designed to charge fully the BS/3 in the least time, regardless of the extent of discharge, and the least amount of servicing to the battery, i.e., adding distilled water.

2577 INVESTIGATION OF FALSE ALARMS ON AS-3 BASE STATION EQUIPMENT ()

25X1A9a

A CU-10 was requisitioned for use in experiments and for possible modification.

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2578 AUTOMATIC 300 WPM HF SYSTEM w/RT-32 ()

25X1A9a

A project to design and build a special purpose transmitter has been initiated. A KE-10 keyer and a delay timer will permit automatic and delayed (0 to 8 hours) 300 wpm keying on any one of a maximum of six preset channels. The transmitter will have a frequency range of 9 to 18 mc. For any particular application the channel frequencies are to be chosen within a 3 mc spread. A breadboard has been tested using the RT-32 transmitter circuits. Relay and cyclic timers are on order. The prototype transmitter, timers, batteries, chargers and keyer will be packaged in a small suitcase for operational testing.

2579 TERMINATED FOLDED DIPOLE (T2FD) ()

25X1A9a

The objective of this project is to make an analysis of the terminated folded dipole for its value as a short-range omnidirectional antenna over the range of 3 to 30 megacycles.

In order to evaluate this antenna in the indoor antenna range, scaling techniques are to be used. Preliminary work is being done on instrumenting a 100-to-1 scaled antenna model and constructing the model on a ground plane. Also, suitable impedance matching devices are being designed and fabricated.

The following projects were completed and the reports distributed this month:

2004-211 AN/TRC-77 Transceiver Evaluation
 2096 Aluminum-Air Battery
 2108-3 AP-3A, AC Power Supply f/u/w AT-3 Transmitter & Battery
 Charger for BS/A-3 & BS/B-3
 2137A KE-19 and KE/A-19 Evaluation
 2167 Ultrasonic Communications System, UC-1 and UC-2
 2181 Direction Finder, DF-3 (Evaluation)
 2540 Sub-Base QFM Reader-Exciter, AT-10

Completed A&A projects - reports in process of being published and distributed:

2004-203 Evaluation of the Model 960, UHF Communications Receiver,
 30 - 300 MC
 2005-126 Hybrid System
 2108-2 Agent Automatic Station Transmitter, AT-3 (Evaluation)
 2164-1 RS-35 Transceiver
 2573 Bifilar Helix Antenna

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The following projects had no activity this month:

2001-96 RS-1 Desiccator Tube
2004-208 Evaluation of Northern Type 174 with Tube Type 6761
2004-212 Comparison Evaluation of the Johnson-Viking, Gates, and
Aerocom Transmitters
2004-213 SSB-5, 125 W (PEP) Single-Sideband Transmitter/Receiver
2005-127 Voice Privacy Transceiver (British) Mark 582
2005-128 [REDACTED] 312 Receiver
2007-61 Circular Intercept Antenna Evaluation
2007-65 Investigation of Low-Frequency Warning Transmitter (Cave
Mapping)
2007-81 Investigation of a Testing Device to Be Used for Deter-
mining the Electrolyte Level of the BS-3 Battery
2007-83 HL-6 Fabrication
2007-85 Fabrication of Modified CU-12 Units (CU-12A)
2172 PS-4 Modification
2182B HD-2 Pipe Receiver
2523 CS-24 System Fabrication
2574 [REDACTED]
2671A-2 4 - 10 KMC Microwave Receiver, CR/B-36 (Evaluation)

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Chief, Research & Development Laboratory

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